

Remarks

Reconsideration of this Requirement for Restriction is respectfully requested. Claims 1-62 are pending in this application. The Examiner has asserted that these claims are directed to two distinct inventions. These include:

Group I (claims 1-33 and 57-62), drawn to an apparatus, classified in class 257, subclass 707, and

Group II (claims 34-56), drawn to a method of making a semiconductor device, classified in class 438, subclass 125.

See Office Action at ¶ 1. The Examiner has required restriction to one of these claim groups.

See Office Action at ¶ 1. Furthermore, the Examiner asserted that claims 1-33 and 57-62 are further directed to the following patentably distinct species of the claimed invention.

Species 1: Embodiment 1, FIG. 4,

Species 2: Embodiments ~~2-5~~, FIG. 5-8,

Species 3: Embodiment 6, FIG. 9A/B,

Species 4: Embodiment 7, FIG. 10A/B, and

Species 5: Embodiments 8-11, FIGS. 11, 12A/B/C, 20, and 21.

See Office Action at ¶ 4. The Examiner has required election of a single disclosed species.

Applicant has elected to prosecute claims 10-22, 59, and 60 related to Species 2 of Group

I. This election of claims is made with traverse. Applicant respectfully submits that the claims should not be restricted between Groups I and II, and that claims of Groups I and II should properly be included in a single patent application.

Independent claim 1 is representative of Group I. Independent claim 34 is representative of Group II. Claim 1 is directed to a ball grid array package, and is shown as follows:

1. A ball grid array (BGA) package, comprising:
 - a-substrate that has a first surface and a second surface;
 - a stiffener that has a first surface and a second surface, wherein said second stiffener surface is attached to said first substrate surface;
 - an IC die that has a first surface and a second surface, wherein said first IC die surface is mounted to said first stiffener surface;
 - a heat spreader that has a first surface, wherein said first heat spreader surface is mounted to said second IC die surface;
 - and
 - a plurality of solder balls attached to said second substrate surface.

Claim 34 is directed to a method for assembling a ball grid array package, and is shown as follows:

34. A method of assembling a ball grid array (BGA) package, comprising the steps of:
 - providing a tape substrate that has a first surface and a second surface;
 - attaching a first surface of a stiffener to the first substrate surface;
 - mounting an IC die to the second stiffener surface;
 - mounting a heat spreader to the IC die; and
 - attaching a plurality of solder balls to the second substrate surface.

Thus, these two claims are directed essentially to the same inventive concept.

The Examiner concedes that "[i]nventions II and I are related as process of making and product made." Office Action at ¶ 2. He further notes that "[t]he inventions are distinct if either or both of the following can be shown: (1) the process as claimed can be used to make other and materially different product, or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f))." Office Action at ¶ 2. The Examiner asserts that the device of Group I could be made by processes different than those of Group II, and provides an example of such a process. The example process provided by the Examiner

essentially includes the steps of claim 34, performed in a different order than shown in claim 34. Office Action at ¶ 2.

Applicant asserts that merely reordering the steps of claim 34 is not a materially different process, as required by part (2) of MPEP § 808.05(f) shown above. Under standard principles of claim construction, the steps of claim 34 may be performed in any order, and still fall within the bounds of coverage of claim 34. This is further supported in the specification of the above-captioned patent application. For example, flowchart 1400 shown on FIG. 14 of the specification corresponds to claim 34. On page 15, lines 14-16 of the specification, Applicant states that "[t]he steps of FIG. 14 do not necessarily have to occur in the order shown, as will be apparent to persons skilled in the relevant art(s) based on the teachings herein." Hence, Applicant asserts that merely reordering the steps of claim 34 does not provide a materially different process, as asserted by the Examiner.

Furthermore, Applicant asserts that a thorough search for the apparatus and method claims will require search in the same art areas. It is respectfully submitted that examination of Groups I and II together will not require additional searching or undue consideration by the Examiner. Thus, claims of Groups I and II should be combined for examination in a single application.

Conclusion

Reconsideration and withdrawal of the Restriction Requirement with regards to Groups I and II is respectfully requested.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor are hereby authorized to be charged to our Deposit Account No. 19-0036.

Respectfully submitted,

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